L3: Entry 1 of 1   File: PGPB   Oct 21, 2004

DOCUMENT-IDENTIFIER: US 20040210388 A1
TITLE: Navigation system

Abstract Paragraph:
A vehicle navigation system includes a program for providing route guidance to a preset location, determining an arrival at the preset location, and scoring points. Points assigned to the preset location are added to a score variable when the arrival at the preset location is determined and the score is stored in a RAM. With this configuration, the vehicle navigation system has game value in addition to a guidance function.

Pre-Grant Publication (PGPub) Document Number:
20040210388

Summary of Invention Paragraph:
[0002] The present invention relates to a navigation system that scores points based on an arrival at a guide point.

Summary of Invention Paragraph:
[0005] The present invention therefore has an objective to provide a navigation system that has game value using functions including a function of determining an arrival at a way point or a destination and a guidance function. A navigation system of the present invention includes a guiding means, and arrival determining means, and a scoring means. The guiding means is provides guidance to reach a preset location. The arrival determining means determines an arrival at a guide point that is provided as the preset location in the route guidance by the guiding means. The scoring means scores points based on the determination performed by the arrival determining means and stores the score.

Summary of Invention Paragraph:
[0006] With this configuration, the navigation system provides guidance to the preset location, scores points when a vehicle or a person travel with this navigation system arrives at the guide point, and stores the score. Namely, the navigation system includes an application with game value of linking an arrival at a location to scoring points, using functions of the navigation system including a function for determining an arrival at a destination and a guidance function. In the navigation system, the scoring means scores points based on an arrival time at the guide point, and stores the score.

Summary of Invention Paragraph:
[0007] In this specification, "Location" refers to a conception of area with a certain extent including an exact spot. "Scoring" refers to a conception of calculation including addition, multiplication, and other operations. "Arrival time at the guide point" refers to a conception of time including time expended to reach the guide point and arrived time at the guide point.

Detail Description Paragraph:
[0037] If the vehicle has reached (passed or arrived) the way point within the time

limit, it adds predetermined points assigned to the way point and stores the <u>score</u> in the RAM. If vehicle has not reached within the time limit, it adds half of the predetermined points assigned to the way point and stores the <u>score</u> in the RAM. Namely, it <u>scores</u> points based on time expended to reach the guide point, and records the points. Then, it displays a total point when the vehicle has reached the destination.

Detail Description Paragraph:
[0039] When the rally game program is started, the program sets a <u>score</u> variable in the RAM and initializes the <u>score</u> variable by setting it to zero. The program also sets a next way point variable in the RAM and sets the way point variable to the furthest way point. Then, it executes a guidance routine shown in flowcharts of FIGS. 3 and 4. In this guidance routine, route guidance to the way point, which is a preset location, is displayed (S210). There are three patterns of the guidance display.

Detail Description Paragraph:
[0050] If it is determined that the vehicle has arrived within the time limit, points assigned to the arrived way point are added to the <u>score</u> variable and the <u>score of the score</u> variable is stored in the RAM (S230). Then, the next way point variable is set to the way point next to the currently arrived way point by referring to the way point list stored in the RAM. Audio and visual information regarding the arrival at the way point and the currently added points is outputted to the display device 20. In a map display section of the display screen of the display device 20, "Arrived at way point 2. 100 points," for instance, is displayed and an audio output indicating the same is provided. Then, the process returns to step S210.

Detail Description Paragraph:
[0051] If it is determined that the vehicle has not arrived within the time limit, half of points assigned to the arrived way point are added to the <u>score</u> variable and the <u>score of the score</u> variable is stored in the RAM (S235). Then, the next way point variable is set to the way point next to the currently arrived way point by referring to the way point list stored in the RAM. Audio and visual information regarding the arrival at the way point and the currently added points are outputted to the display device 20. In a map display section of the display screen, "Arrived at way point 2. 100 points," for instance, is displayed and an audio output indicating the same is provided. Then, the process returns to step S210.

Detail Description Paragraph:
[0052] Referring to FIG. 4, it is determined whether the vehicle has arrived at the way point (destination) within the time limit (S240). If the vehicle has arrived at the destination within the time limit, the points assigned to the destination are added to the <u>score</u> variable and the <u>score of the score</u> variable is stored in the RAM (S245). If the vehicle has not arrived at the destination within the time limit, half of the points are added to the <u>score</u> variable and the <u>score of the score</u> variable is stored in the RAM (S250). Then, audio and visual signals that indicate the total point, namely, the current value of the point variable are outputted to the display device 20 (S260). In the map display section of the display screen, "Arrived at the destination. Total 250 points," for instance, is displayed as shown in FIG. 11 and an audio output indicating the same is provided.

Detail Description Paragraph:
[0062] With the above configuration, the vehicle navigation system 1 provides guidance to go to a preset location (way point) through the rally game program. When a vehicle or a person that travels with the navigation system 1 arrives at the guide point, points are added. Namely, the arrival at a way point is linked with <u>scoring</u> by using a function for determining an arrival at a way point or a destination and a guiding function. Therefore, an application having game value is provided.

Detail Description Paragraph:

[0063] The present invention should not be limited to the embodiment previously discussed and shown in the figures, but may be implemented in various ways without departing from the spirit of the invention. For example, the distance from the way point predetermined for determining an arrival of the vehicle at a way point may be set by the user. The distance may be uniformly set for all way points or differently set for each way point. When the distance is set short, for instance 10 m, a high score may be assigned to the way point because it will be difficult to pass the way point. When the distance is set long, for instance 100 m, a low score may be assigned to the way point.

CLAIMS:

1. A navigation system comprising: a guiding means for providing route guidance to a preset location; an arrival determining means for determining an arrival at a guide point that is provided as the preset location in the route guidance by the guiding means; and a scoring means for scoring points based on the determination performed by the arrival determining means and storing the score.

5. The navigation system according to claim 1, wherein the scoring means scores points based on an arrival time at the guide point, and stores the score.

6. The navigation system according to claim 5, wherein the scoring means scores points based on an arrival time at the guide point and a preset time limit, and stores the score.

7. The navigation system according to claim 5, wherein the scoring means scores points based on time between an arrival at a previous guide point determined by the arrival determining means and an arrival at a current guide point that the guiding means provides as a preset location in the route guidance.